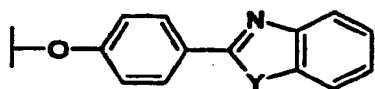


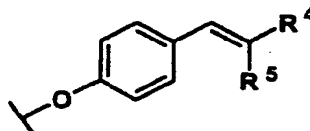
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DSM IP ASSETS B.V.
PCT/EP2005/003117
January 25, 2006Patent claims:

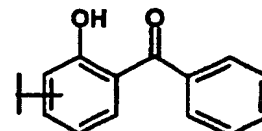
1. A cosmetic composition comprising a conjugate comprising a hyperbranched polymer covalently bonded to at least three UV absorbing chromophores having an UV absorption maximum $\lambda_{\max} \geq 270$ nm selected from the group consisting of the moieties represented by general formulae (V-A) to (V-F)



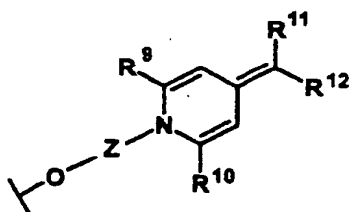
(V-A)



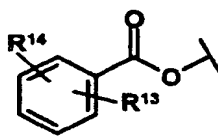
(V-B)



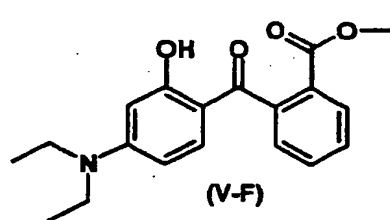
(V-C)



(V-D)



(V-E)



(V-F)

wherein

Y is O or NR³ wherein R³ is H, C₁-C₆-alkyl or C₂-C₆-alkenyl;

R⁴ and R⁵ are independently H, C₁-C₆-alkyl, C₂-C₆-alkenyl, CO₂H, CO₂-C₁-C₆-alkyl, or R⁴ and R⁵ together with the carbon atom to which they are attached form a 6-membered ring;

R⁹ and R¹⁰ are independently H or C₁-C₆-alkyl;

R¹¹ and R¹² are independently H, C₁-C₆-alkyl, NO₂, CO₂-C₁-C₆-alkyl or CN;

Z is C₁-C₆-alkylene, optionally interrupted by 1 to 3 oxygen atoms;

R¹³ and R¹⁴ are independently H, OR¹⁵, NR¹⁶R¹⁷ or C₁-C₆-alkyl; and

R¹⁵, R¹⁶ and R¹⁷ are independently selected from H and C₁-C₆-alkyl;

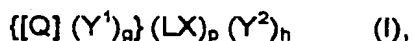
and wherein in the above definition the symbol "—" denotes the linkage to the hyperbranched polymer;

or a moiety of benzophenone-3, benzophenone-4,2,2',4,4'-tetrahydroxy-benzophenone and 2,2'-dihydroxy-4,4'-dimethoxybenzophenone;

and a cosmetically acceptable carrier.

2. Compositions according to claim 1, characterized in that the hyperbranched polymer exhibits an average degree of branching $\geq 25\%$.

3. Compositions according to any of the preceding claims, characterized in that the hyperbranched polymer has an average molecular weight M_w within the range of from 500 to 50,000 g mol⁻¹.
4. Compositions according to any of the preceding claims, characterized in that the hyperbranched polymer comprises an average number of 2 to 600 dendritic building blocks.
5. Compositions according to any of the preceding claims, characterized in that the hyperbranched polymer comprises a structure represented by general formula (I)



wherein

Y^1 and Y^2 independently represent UV absorbing chromophores;

$\{[Q] (Y^1)_g\}$ represents the hyperbranched polymer covalently bonded to g UV absorbing chromophores Y^1 ;

$(LX)_p$ represents p linker units LX, wherein independently the distal end of each linker unit LX bears a functional group X either being

- covalently bonded to an UV absorbing chromophore Y^2 , or
- covalently bonded to a capping group, or
- in its free reactive form,

and wherein the proximal end of each linker unit LX is covalently bonded to the hyperbranched polymer; and

wherein

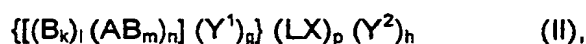
index g is an integer, wherein $0 \leq g \leq 100$;

index h is an integer, wherein $0 \leq h \leq p$; and

index p is an integer, wherein $0 \leq p \leq 100$;

with the proviso that $g + h \geq 3$.

6. Compositions according to claim 5, characterized in that the hyperbranched polymer comprises a structure represented by general formula (II)



wherein

Y^1 and Y^2 are defined as in claim 5;

LX is defined as in claim 5;

B_k represents a starter unit bearing k functional groups B , wherein independently each functional group B is

- covalently bonded to a functional group A of a building block AB_m , or
- covalently bonded to the proximal end of a linker unit LX , or
- covalently bonded to an UV absorbing chromophore Y^1 , or
- covalently bonded to a capping group, or
- in its free reactive form;

$(AB_m)_n$ represents n building blocks AB_m , each bearing a functional group A and m independent functional groups B , wherein independently each functional group A is

- covalently bonded to a functional group B
 - of a further building block AB_m or
 - of the starter unit B_k , or
- covalently bonded to a capping group, or
- in its free reactive form,

and wherein independently each functional group B is

- covalently bonded to a functional group A of a further building block AB_m , or
- covalently bonded to the proximal end of a linker unit LX , or
- covalently bonded to an UV absorbing chromophore Y^1 , or
- covalently bonded to a capping group, or

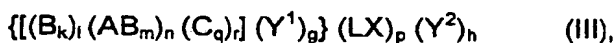
- in its free reactive form;

wherein

- index g is defined as in claim 5;
- index h is defined as in claim 5;
- index k is an integer of from 1 to 6;
- index l is 0 or 1;
- index m is an integer of from 2 to 4;
- index n is an integer of from 3 to 100; and
- index p is an integer wherein $0 \leq p \leq n(m-1)+k$.

7. Compositions according to claim 6, characterized in that in the hyperbranched polymer index l is 1, the starting unit B_k is trimethylolpropane and the building block AB_m is glycidol.

8. Compositions according to claim 5, characterized in that the hyperbranched polymer comprises a structure represented by general formula (III)



wherein

Y^1 and Y^2 are defined as in claim 5;

LX is defined as in claim 5;

B_k represents a starter unit bearing k functional groups B, wherein independently each functional group B is

- covalently bonded to a functional group C
 - of a monomer C_2 or
 - of a building block C_q or
- covalently bonded to the proximal end of a linker unit LX , or
- covalently bonded to an UV absorbing chromophore Y^1 , or
- covalently bonded to a capping group, or
- in its free reactive form;

$(AB_m)_n$ represents n building blocks AB_m , each bearing a functional group A and m independent functional groups B, wherein independently each functional group A is

- covalently bonded to a functional group C
 - of a monomer C_2 or
 - of a building block C_q , or

- covalently bonded to the proximal end of a linker unit LX, or
- covalently bonded to an UV absorbing chromophore Y¹, or
- covalently bonded to a capping group, or
- in its free reactive form;

and wherein independently each functional group B is

- covalently bonded to a functional group C
 - of a monomer C₂ or
 - of a building block C_q, or
- covalently bonded to the proximal end of a linker unit LX, or
- covalently bonded to an UV absorbing chromophore Y¹, or
- covalently bonded to a capping group, or
- in its free reactive form;

(C_q)_r represents

- when index q = 2: r monomers C₂ or
- when index q > 2: r building blocks C_q

each bearing q functional groups C, wherein independently each functional group C is

- covalently bonded to a functional group A of a building block AB_m, or
- covalently bonded to a functional group B
 - of a building block AB_m or
 - of the starter unit B_k, or
- covalently bonded to the proximal end of a linker unit LX, or
- covalently bonded to an UV absorbing chromophore Y¹, or
- covalently bonded to a capping group, or
- in its free reactive form;

wherein

index g is defined as in claim 5;

index h is defined as in claim 5;

index k is an integer of from 1 to 6;

index l is 0 or 1;

index m is an integer of from 2 to 4;

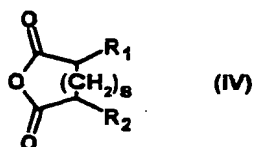
index n is an integer of from 3 to 100;

index p is an integer wherein $0 \leq p \leq n(m-1) + r(q-1) + k$;

index q is an integer of from 2 to 4; and

index r is an integer wherein $1 \leq r \leq nm/q$.

9. Compositions according to claim 8, characterized in the hyperbranched polymer index l is 0, index q is 2, building block AB_m is diisopropanolamine and monomer C_2 is a compound represented by general formula (IV)



wherein

index s is 0, 1 or 2;

R^1 and R^2 are independently H, linear or branched C_1 - C_{18} -alkyl or C_2 - C_{18} -alkenyl, or

R^1 and R^2 together with the carbon atoms to which they are attached form a 4 to 7 membered aliphatic or aromatic ring.

10. The composition according to any of claims 5 to 9, characterized in that in the hyperbranched polymer the linker unit LX comprises polyethyleneoxide or polypropyleneoxide.

11. Compositions according to any of claims 5 to 10, characterized in that the hyperbranched polymer comprises 1 to 20 capping groups.

12. Compositions according to claim 11, characterized in that the capping group is a straight or branched chain ether or ester group with 1 to 20 carbon atoms.
